

1 WHAT IS CLAIMED IS:

2 1. A microparticle comprised of an electrically
3 conductive material having (a) one or more copies of an assay-
4 ligand immobilized on its surface and (b) a plurality of
5 electrochemiluminescent moieties immobilized on its surface.

6 2. A microparticle comprised of an electrically
7 conductive material having a coating thereupon, and further
8 comprising (a) one or more copies of an assay-ligand immobilized
9 on said coating, and (b) a plurality of electrochemiluminescent
10 moieties immobilized on said coating.

11 3. A microparticle comprised of an electrically
12 conductive material having plurality of copies of an assay-ligand
13 labeled with an electrochemiluminescent moiety immobilized on its
14 surface.

15 4. A microparticle comprised of an electrically
16 conductive material having a plurality of copies of a binding
17 reactant labeled with an electrochemiluminescent moiety
18 immobilized on its surface.

19 5. A microparticle comprised of an electrically
20 conductive material having a plurality of copies of an
21 immunoreactant labeled with an electrochemiluminescent moiety
22 immobilized on its surface.

23 6. A method for conducting electrochemiluminescence
24 measurements for a binding analyte-of-interest comprising the
25 steps of:

- 1 (a) forming a complex comprising
2 (i) a microparticle comprised of an
3 electrically conductive material having
4 one or more copies of an assay-ligand
5 immobilized on its surface, said assay-
6 ligand being capable of binding with
7 said analyte or with
8 (ii) an assay-ligand immobilized on an electrode;
9 and
10 (b) conducting an electrochemiluminescence measurement
11 at said electrode in the presence of
12 electrochemiluminescence reactants.

13 7. A method for conducting electrochemiluminescence
14 measurements for a binding analyte-of-interest comprising the
15 steps of:

- 16 (a) forming a complex comprising
17 (i) a microparticle comprised of an
18 electrically conductive material having
19 one or more copies of an assay-ligand
20 immobilized on its surface and a
21 plurality of electrochemiluminescent
22 moieties immobilized on its surface; and
23 (ii) an assay-ligand immobilized on an
24 electrode;

1 (b) conducting an electrochemiluminescence
2 measurement at said electrode in the presence
3 of electrochemiluminescence reactants.

4 8. A method for conducting electrochemiluminescence
5 measurements for a binding analyte-of-interest comprising the
6 steps of:

7 (a) forming a complex comprising
8 (i) a microparticle comprised of an
9 electrically conductive material having
10 a plurality of copies of an assay-ligand
11 immobilized on its surface, said assay-
12 ligand being capable of binding with
13 said analyte or with an assay-ligand
14 immobilized on an electrode and being
15 labeled with an electrochemiluminescent
16 moiety; and
17 (ii) an assay-ligand immobilized on an
18 electrode;

19 (b) conducting an electrochemiluminescence
20 measurement at said electrode in the presence
21 of electrochemiluminescence reactants.

1 9. A method for conducting electrochemiluminescence
2 measurements for a binding analyte-of-interest comprising the
3 steps of:

- 4 (a) forming a complex comprising
5 (i) said analyte,
6 (ii) a microparticle having one or more
7 copies of an assay-ligand immobilized on
8 its surface, said assay-ligand being
9 capable of binding with said analyte;
10 and
11 (iii) an assay-ligand immobilized on an
12 electrode.
13 (b) conducting an electrochemiluminescence
14 measurement at said electrode in the presence
15 of electrochemiluminescence reactants.

16 10. A method for conducting electrochemiluminescence
17 measurements for a binding analyte-of-interest comprising the
18 steps of:

- 19 (a) forming a complex comprising
20 (i) said analyte,
21 (ii) a microparticle having one or more
22 copies of a binding reactant immobilized
23 on its surface, said binding reactant
24 being specific for said analyte, and

(iii) a binding reactant immobilized on an
electrode; and

(b) conducting an electrochemiluminescence
measurement at said electrode in the presence
of electrochemiluminescence reactants.

11. A method for conducting electrochemiluminescence
measurements for a binding analyte-of-interest comprising the
steps of:

(a) forming a complex comprising
(i) said analyte,
(ii) a microparticle having one or more
copies of an assay-ligand immobilized on
its surface and a plurality of
electrochemiluminescent moieties
immobilized on its surface; and
(iii) an assay-ligand immobilized on an
electrode.

(b) conducting an electrochemiluminescence
measurement at said electrode in the presence
of electrochemiluminescence reactants.

12. A method for conducting electrochemiluminescence
measurements for a binding analyte-of-interest comprising the
steps of:

(a) forming a complex comprising
(i) said analyte,

1 (ii) a microparticle having a plurality of
2 copies of an assay-ligand immobilized on
3 its surface, said assay-ligand being
4 capable of binding with said analyte or
5 with an assay-ligand immobilized on an
6 electrode and being labeled with an
7 electrochemiluminescent moiety; and

8 (iii) an assay-ligand immobilized on an
9 electrode.

10 (b) conducting an electrochemiluminescence
11 measurement at said electrode in the presence
12 of electrochemiluminescence reactants.

13 13. A method for conducting electrochemiluminescence
14 measurements for a binding analyte-of-interest comprising the
15 steps of:

16 (a) forming a complex comprising

17 (i) said analyte,

18 (ii) a microparticle comprised of an
19 electrically conductive material having
20 one or more copies of an assay-ligand
21 immobilized on its surface, said assay-
22 ligand being capable of binding with
23 said analyte or with (iii); and

24 (iii) an assay-ligand immobilized on an
25 electrode; and

- 1 (b) conducting an electrochemiluminescence
2 measurement at said electrode in the presence
3 of electrochemiluminescence reactants.

4 14. A method for conducting electrochemiluminescence
5 measurements for a binding analyte-of-interest comprising the
6 steps of:

- 7 (a) forming a complex comprising
8 (i) said analyte,
9 (ii) a microparticle having one or more
10 copies of an assay-ligand immobilized on
11 its surface and a plurality of
12 electrochemiluminescent moieties
13 immobilized on its surface; and
14 (iii) an assay-ligand immobilized on an
15 electrode.

- 16 (b) conducting an electrochemiluminescence
17 measurement at said electrode in the presence
18 of electrochemiluminescence reactants.

19 15. A method for conducting electrochemiluminescence
20 measurements for a binding analyte-of-interest comprising the
21 steps of:

- 22 (a) forming a complex comprising
23 (i) said analyte,
24 (ii) a microparticle comprised of an
25 electrically conductive material having

1 one or more copies of an assay-ligand
2 immobilized on its surface, said assay-
3 ligand being capable of binding with
4 said analyte or with an assay-ligand
5 immobilized on an electrode and being
6 labeled with an electrochemiluminescent
7 moiety; and

8 (iii) an assay-ligand immobilized on an
9 electrode;

10 (b) conducting an electrochemiluminescence
11 measurement at said electrode in the presence
12 of electrochemiluminescence reactants.

13 16. A method for performing an
14 electrochemiluminescence binding assay for an analyte-of-interest
15 present in a sample comprising the steps of:

16 (a) forming a composition comprising

17 (i) said sample; and

18 (ii) a microparticle comprised of an
19 electrically conductive material having
20 one or more of copies of an assay-ligand
21 immobilized on its surface, said assay-
22 ligand being capable of binding with
23 said analyte or with the assay-ligand
24 recited in step (c);

- 1 (b) incubating said composition to form a
2 complex;
3 (c) causing said complex to bind to an assay-
4 ligand immobilized on an electrode; and
5 (d) conducting an electrochemiluminescence
6 measurement in the presence of
7 electrochemiluminescence reactants.

8 17. A method for performing an
9 electrochemiluminescence binding assay for an analyte-of-interest
10 present in a sample comprising the steps of:

- 11 (a) forming a composition comprising
12 (i) said sample;
13 (ii) a microparticle comprised of an
14 electrically conductive material having
15 one or more of copies of an assay-ligand
16 immobilized on its surface, said assay-
17 ligand being capable of binding with
18 said analyte or with (iii); and
19 (iii) an assay-ligand immobilized on an
20 electrode;
21 (b) incubating said composition to form a
22 complex; and
23 (c) conducting an electrochemiluminescence
24 measurement in the presence of
25 electrochemiluminescence reactants.

1 18. A method for performing an
2 electrochemiluminescence binding assay for an analyte-of-interest
3 present in a sample comprising the steps of:

- 4 (a) forming a system comprising
5 (i) said sample; and
6 (ii) an assay-ligand immobilized on an
7 electrode;
8 (b) incubating said system to form a complex;
9 (c) causing said complex to bind to a
10 microparticle comprised of an electrically
11 conductive material having one or more one or
12 more copies of an assay-ligand immobilized on
13 its surface, said assay-ligand being capable
14 of binding with said analyte or with an
15 assay-ligand; and
16 (d) conducting an electrochemiluminescence
17 measurement at said electrode in the presence
18 of electrochemiluminescence reactants.

19 19. A method for performing an
20 electrochemiluminescence binding assay for an analyte-of-interest
21 present in a sample based upon measurements of
22 electrochemiluminescence at an electrode comprising the steps of:

- 23 (a) forming a composition comprising
24 (i) said sample; and

1 (ii) a microparticle comprised of an
2 electrically conductive material having
3 one or more copies of an assay-ligand
4 immobilized on its surface and a
5 plurality of electrochemiluminescent
6 moieties immobilized on its surface;

7 (b) incubating said composition to form a
8 complex;

9 (c) causing said complex to bind to an assay-
10 ligand immobilized on an electrode; and

11 (d) conducting an electrochemiluminescence
12 measurement at said electrode in the presence
13 of electrochemiluminescence reactants.

14 20. A method for performing an
15 electrochemiluminescence binding assay for an analyte-of-interest
16 present in a sample based upon measurements of
17 electrochemiluminescence at an electrode comprising the steps of:

18 (a) forming a composition comprising

19 (i) said sample; and

20 (ii) a microparticle comprised of an

21 electrically conductive material having
22 a plurality of copies of an assay-ligand
23 immobilized on its surface, said assay-
24 ligand being capable of binding with
25 said analyte or with an assay-ligand and

- 1 being labeled with an
2 electrochemiluminescent moiety;
3 (b) incubating said composition to form a
4 complex;
5 (c) causing said complex to bind to an assay-
6 ligand immobilized on an electrode; and
7 (d) conducting an electrochemiluminescence
8 measurement at said electrode in the presence
9 of electrochemiluminescence reactants.

10 21. A method for performing an
11 electrochemiluminescence binding assay for an analyte-of-interest
12 present in a sample based upon measurements of
13 electrochemiluminescence at an electrode comprising the steps:

- 14 (a) forming a system comprising
15 (i) said sample; and
16 (ii) a microparticle comprised of an
17 electrically conductive material having
18 one or more copies of an assay-ligand
19 immobilized on its surface and a
20 plurality of electrochemiluminescent
21 moieties immobilized on its surface;
22 (iii) an assay-ligand immobilized on an
23 electrode;
24 (b) incubating said system to form a complex; and

- 1 (c) conducting an electrochemiluminescence
2 measurement at said electrode in the presence
3 of electrochemiluminescence reactants.

4 22. A method for performing an
5 electrochemiluminescence binding assay for an analyte-of-interest
6 present in a sample based upon measurements of
7 electrochemiluminescence at an electrode comprising the steps:

- 8 (a) forming a system comprising
9 (i) said sample; and
10 (ii) a microparticle comprised of an
11 electrically conductive material having
12 a plurality of copies of an assay-ligand
13 immobilized on its surface, said assay-
14 ligand being capable of binding with
15 said analyte or with an assay-ligand and
16 being labeled with an
17 electrochemiluminescent moiety;
18 (iii) an assay-ligand immobilized on an
19 electrode;
20 (b) incubating said system to form a complex; and
21 (c) conducting an electrochemiluminescence
22 measurement at said electrode in the presence
23 of electrochemiluminescence reactants.

24 23. A method for performing an
25 electrochemiluminescence binding assay for an analyte-of-interest

1 present in a sample based upon measurements of
2 electrochemiluminescence at an electrode comprising the steps:

- 3 (a) forming a system comprising
4 (i) said sample; and
5 (ii) an assay-ligand immobilized on an
6 electrode;
7 (b) incubating said system to form a complex;
8 (c) causing said complex to bind to a
9 microparticle comprised of an electrically
10 conductive material having one or more copies
11 of an assay-ligand immobilized on its surface
12 and a plurality of electrochemiluminescent
13 moieties immobilized on its surface; and
14 (d) conducting an electrochemiluminescence
15 measurement at said electrode in the presence
16 of electrochemiluminescence reactants.

17 24. A method for performing an
18 electrochemiluminescence binding assay for an analyte-of-interest
19 present in a sample based upon measurements of
20 electrochemiluminescence at an electrode comprising the steps:

- 21 (a) forming a system comprising
22 (i) said sample; and
23 (ii) an assay-ligand immobilized on an
24 electrode;
25 (b) incubating said system to form a complex;

- 1 (c) causing said complex to bind to a
2 microparticle comprised of an electrically
3 conductive material having a plurality of
4 copies of an assay-ligand immobilized on its
5 surface, said assay-ligand being capable of
6 binding with said analyte or with an assay-
7 ligand and being labeled with an
8 electrochemiluminescent moiety; and
9 (d) conducting an electrochemiluminescence
10 measurement at said electrode in the presence
11 of electrochemiluminescence reactants.

12 25. A method for performing an
13 electrochemiluminescence binding assay for an analyte-of-interest
14 present in a sample based upon measurements of
15 electrochemiluminescence at an electrode comprising the steps:

- 16 (a) forming a system comprising
17 (i) said sample; and
18 (ii) a microparticle having one or more
19 copies of an assay-ligand immobilized on
20 its surface and a plurality of
21 electrochemiluminescent moieties
22 immobilized on its surface;
23 (b) incubating said composition to form a
24 complex;

- 1 (c) causing said complex to bind to an assay-
2 ligand immobilized on an electrode; and
3 (d) conducting an electrochemiluminescence
4 measurement at said electrode in the presence
5 of electrochemiluminescence reactants.

6 26. A method for performing an
7 electrochemiluminescence binding assay for an analyte-of-interest
8 present in a sample based upon measurements of
9 electrochemiluminescence at an electrode comprising the steps:

- 10 (a) forming a system comprising
11 (i) said sample; and
12 (ii) a microparticle having a plurality of
13 copies of an assay-ligand immobilized on
14 its surface, said assay-ligand being
15 capable of binding with said analyte or
16 with an assay-ligand and being labeled
17 with an electrochemiluminescent moiety;
18 (b) incubating said composition to form a
19 complex;
20 (c) causing said complex to bind to an assay-
21 ligand immobilized on an electrode; and
22 (d) conducting an electrochemiluminescence
23 measurement at said electrode in the presence
24 of electrochemiluminescence reactants.

1 27. A method for performing an
2 electrochemiluminescence binding assay for an analyte-of-interest
3 present in a sample based upon measurements of
4 electrochemiluminescence at an electrode comprising the steps:

- 5 (a) forming a system comprising
6 (i) said sample; and
7 (ii) a microparticle having one or more
8 copies of an assay-ligand immobilized on
9 its surface and a plurality of
10 electrochemiluminescent moieties
11 immobilized on its surface;
12 (iii) an assay-ligand immobilized on an
13 electrode;
14 (b) incubating said composition to form a
15 complex; and
16 (c) conducting an electrochemiluminescence
17 measurement at said electrode in the presence
18 of electrochemiluminescence reactants.

19 28. A method for performing an
20 electrochemiluminescence binding assay for an analyte-of-interest
21 present in a sample based upon measurements of
22 electrochemiluminescence at an electrode comprising the steps:

- 23 (a) forming a system comprising
24 (i) said sample; and

- 1 (ii) a microparticle having a plurality of
2 copies of an assay-ligand immobilized on
3 its surface, said assay-ligand being
4 capable of binding with said analyte or
5 with an assay-ligand and being labeled
6 with an electrochemiluminescent moiety;
7 (iii) an assay-ligand immobilized on an
8 electrode;

- 9 (b) incubating said composition to form a
10 complex; and
11 (c) conducting an electrochemiluminescence
12 measurement at said electrode in the presence
13 of electrochemiluminescence reactants.

14 29. A method for performing an
15 electrochemiluminescence binding assay for an analyte-of-interest
16 present in a sample based upon measurements of
17 electrochemiluminescence at an electrode comprising the steps:

- 18 (a) forming a system comprising
19 (i) said sample; and
20 (ii) an assay-ligand immobilized on an
21 electrode;
22 (b) incubating said composition to form a
23 complex; and
24 (c) causing said complex to bind to a
25 microparticle having one or more copies of an

1 assay-ligand immobilized on its surface and a
2 plurality of electrochemiluminescent moieties
3 immobilized on its surface; and

4 (d) conducting an electrochemiluminescence
5 measurement at said electrode in the presence
6 of electrochemiluminescence reactants.

7 30. A method for performing an
8 electrochemiluminescence binding assay for an analyte-of-interest
9 present in a sample based upon measurements of
10 electrochemiluminescence at an electrode comprising the steps:

11 (a) forming a system comprising

12 (i) said sample; and

13 (ii) an assay-ligand immobilized on an
14 electrode;

15 (b) incubating said composition to form a
16 complex; and

17 (c) causing said complex to bind to a
18 microparticle having a plurality of copies of
19 an assay-ligand immobilized on its surface,
20 said assay-ligand being capable of binding
21 with said analyte or with an assay-ligand and
22 being labeled with an electrochemiluminescent
23 moiety; and

- 1 (d) conducting an electrochemiluminescence
2 measurement at said electrode in the presence
3 of electrochemiluminescence reactants.

4 31. A method for performing an
5 electrochemiluminescence binding assay for an analyte-of-interest
6 present in a sample comprising the steps of:

- 7 (a) forming a composition comprising
8 (i) said sample; and
9 (ii) a microparticle having one or more
10 copies of an assay-ligand immobilized on
11 its surface, said assay-ligand being
12 capable of binding with said analyte or
13 with the assay-ligand recited in step
14 (c);
15 (b) incubating said composition to form a
16 complex;
17 (c) causing said complex to bind to an assay-
18 ligand immobilized on an electrode; and
19 (d) conducting an electrochemiluminescence
20 measurement in the presence of
21 electrochemiluminescence reactants.

22 32. A method for performing an
23 electrochemiluminescence binding assay for an analyte-of-interest
24 present in a sample comprising the steps of:

- 25 (a) forming a composition comprising

- 1 (i) said sample;
2 (ii) a microparticle having one or more
3 copies of an assay-ligand immobilized on
4 its surface, said assay-ligand being
5 capable of binding with said analyte or
6 with (iii); and
7 (iii) an assay-ligand immobilized on an
8 electrode;
9 (b) incubating said composition to form a
10 complex; and
11 (c) conducting an electrochemiluminescence
12 measurement in the presence of
13 electrochemiluminescence reactants.

14 33. A method for performing an
15 electrochemiluminescence binding assay for an analyte-of-interest
16 present in a sample comprising the steps of:

- 17 (a) forming a system comprising
18 (i) said sample; and
19 (ii) an assay-ligand immobilized on an
20 electrode;
21 (b) incubating said system to form a complex;
22 (c) causing said complex to bind to a
23 microparticle having one or more copies of an
24 assay-ligand immobilized on its surface, said

1 assay-ligand being capable of binding with
2 said analyte or with an assay-ligand; and
3 (d) conducting an electrochemiluminescence
4 measurement at said electrode in the presence
5 of electrochemiluminescence reactants.

6 34. A complex comprising:

- 7 (a) an analyte-of-interest;
8 (b) a microparticle having one or more copies of
9 an assay-ligand immobilized on its surface
10 and a plurality of electrochemiluminescent
11 moieties immobilized on its surface; and
12 (c) an assay-ligand immobilized on an electrode.

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1 35. A method for performing an
2 electrochemiluminescence binding assay for an analyte-of-interest
3 present in a sample comprising the steps of:

- 4 (a) forming a composition comprising
5 (i) said sample;
6 (ii) a microparticle comprised of an
7 electrically conductive material; and
8 (iii) an assay-ligand immobilized on an
9 electrode;
10 (b) incubating said composition to form a
11 complex; and
12 (c) conducting an electrochemiluminescence
13 measurement in the presence of
14 electrochemiluminescence reactants.

15 36. A method for performing an
16 electrochemiluminescence binding assay for an analyte-of-interest
17 present in a sample comprising the steps of:

- 18 (a) forming a composition comprising
19 (i) said sample;
20 (ii) a microparticle comprised of an
21 electrically conductive material, said
22 microparticle having one or more copies
23 of an assay-ligand and a plurality of
24 electrochemiluminescent moieties
25 immobilized on its surface; and

(iii) an assay-ligand immobilized on an electrode;

(b) incubating said composition to form a complex; and

(c) conducting an electrochemiluminescence measurement in the presence of electrochemiluminescence reactants.

37. A method for conducting electrochemiluminescence measurements for a binding analyte-of-interest comprising the steps of:

(a) forming a complex comprising

(i) a microparticle having one or more copies of an assay-ligand and plurality of electrochemiluminescent moieties immobilized on its surface; and

(ii) an assay-ligand immobilized on an electrode; and

(b) conducting an electrochemiluminescence measurement at said electrode in the presence of electrochemiluminescence reactants.

38. A method for conducting electrochemiluminescence measurements for a binding analyte-of-interest comprising the steps of:

(a) forming a complex comprising

1 (i) a microparticle comprised of an
2 electrically conductive material having
3 one or more copies of an assay-ligand
4 immobilized on its surface; and

5 (ii) an assay-ligand immobilized on an electrode;
6 and

7 (b) conducting an electrochemiluminescence measurement
8 at said electrode in the presence of
9 electrochemiluminescence reactants.

10 39. A method for conducting electrochemiluminescence
11 measurements for a binding analyte-of-interest comprising the
12 steps of:

13 (a) forming a complex comprising

14 (i) a microparticle comprised of an
15 electrically conductive material, said
16 microparticle having one or more copies
17 of an assay-ligand and a plurality of
18 electrochemiluminescent moieties
19 immobilized on its surface; and

20 (ii) an assay-ligand immobilized on an electrode;
21 and

22 (b) conducting an electrochemiluminescence measurement
23 at said electrode in the presence of
24 electrochemiluminescence reactants.

1 40. A reagent for carrying out ECL assays for an
2 analyte-of-interest comprising an assay-ligand, said assay-ligand
3 being linked to a soluble polymer comprising a plurality of
4 electrochemiluminescence moieties.

5 41. A complex comprising:

- 6 (a) an analyte-of-interest
7 (b) an assay-ligand linked to a soluble polymer,
8 said polymer comprising a plurality of
9 electrochemiluminescent moieties.
10 (c) an assay ligand immobilized on an electrode.

11 42. A method for conducting electrochemiluminescence
12 measurements for a binding analyte-of-interest comprising the
13 steps of:

- 14 (a) forming a complex comprising
15 (i) an assay-ligand linked to a soluble
16 polymer, said polymer comprising a
17 plurality of ECL moieties, said assay-
18 ligand being capable of binding with
19 said analyte or with;
20 (ii) an assay-ligand immobilized on an electrode;
21 and
22 (b) conducting an electrochemiluminescence measurement
23 at said electrode in the presence of
24 electrochemiluminescence reactants.

1 43. A method for conducting electrochemiluminescence
2 measurements for a binding analyte-of-interest comprising the
3 steps of:

- 4 (a) forming a complex comprising
5 (i) said analyte,
6 (ii) an assay-ligand linked to a soluble
7 polymer, said polymer comprising a
8 plurality of ECL moieties, said assay-
9 ligand being capable of binding with
10 said analyte; and
11 (iii) an assay-ligand immobilized on an
12 electrode.
13 (b) conducting an electrochemiluminescence
14 measurement at said electrode in the presence
15 of electrochemiluminescence reactants.

16 44. A method for performing an
17 electrochemiluminescence binding assay for an analyte-of-interest
18 present in a sample based upon measurements of
19 electrochemiluminescence at an electrode comprising the steps:

- 20 (a) forming a system comprising
21 (i) said sample; and
22 (ii) an assay-ligand linked to a soluble
23 polymer, said polymer comprising a
24 plurality of electrochemiluminescent
25 moieties; and

(iii) an assay-ligand immobilized on an
electrode;

(b) incubating said system to form a complex; and

(c) conducting an electrochemiluminescence
measurement at said electrode in the presence
of electrochemiluminescence reactants.

45. A metallic microparticle having a plurality of
electrochemiluminescent moieties immobilized on its surface.

46. The microparticle of claim 1 wherein said
microparticle is comprised of gold.

47. The microparticle of claim 1 wherein said
microparticle comprises a carbon fibril.

48. The microparticle of claim 1 wherein said
microparticle comprises a carbon-based particle.

49. The microparticle of claim 1 wherein said
microparticle comprises a metal oxide.

50. The microparticle of claim 1 wherein said
microparticle comprises a conductive polymer.

51. The microparticle of claim 1 wherein said
microparticle comprises a semi-conductor material.

52. The microparticle of claim 1 wherein said
microparticle comprises silicon dioxide.

53. The microparticle of claim 1 wherein said
microparticle comprises an organic polymer.

1 54. The microparticle of claim 1 wherein said
2 conductive material is light-transmissive.

3 55. The microparticle of claim 1 wherein said
4 microparticle has a size of from 5nm-10 micrometer.

5 56. The microparticle of claim 1 wherein said
6 microparticle has a size of from 20nm-200nm.

7 59. The microparticle of claim 1 wherein said
8 microparticle is comprised of a highly conductive material.

9 60. The microparticle of claim 1 wherein said
10 microparticle is comprised of a very highly conductive material.

11 61. The microparticle of claim 1 wherein the number of
12 said electrochemiluminescent moieties is greater than 100.

13 62. The microparticle of claim 1 wherein said
14 microparticle is comprised of an ECL-active electrode material.

15 63. The method of claim 6 wherein said microparticle
16 is comprised of gold.

17 64. The method of claim 6 wherein said microparticle
18 comprises a carbon fibril.

19 65. The method of claim 6 wherein said microparticle
20 comprises a carbon-based particle.

21 66. The method of claim 6 wherein said microparticle
22 comprises a metal oxide.

23 67. The method of claim 6 wherein said microparticle
24 comprises a conductive polymer.

1 68. The method of claim 6 wherein said microparticle
2 comprises a semi-conductor material.

3 69. The method of claim 6 wherein said microparticle
4 comprises silicon dioxide.

5 70. The method of claim 6 wherein said microparticle
6 comprises an organic polymer.

7 71. The method of claim 6 wherein said conductive
8 material is light-transmissive.

9 72. The method of claim 6 wherein said microparticle
10 has a size of from 5nm-10 micrometer.

11 73. The method of claim 6 wherein said microparticle
12 has a size of from 20nm-200nm.

13 74. The method of claim 6 wherein said microparticle
14 is comprised of a very highly conductive material.

15 75. The method of claim 6 wherein said microparticle
16 is comprised of a highly conductive material.

17 76. The method of claim 6 wherein the number of said
18 electrochemiluminescent moieties is greater than 100.

19 77. The method of claim 6 wherein said microparticle
20 is comprised of an ECL-active electrode material.
21